



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

Site:	medley Farm
Break:	3.10
Other:	

JAN 22 1991

4WD-NSRB

Ms. Mary Jane Norville
King & Spalding
2500 Trust Company Tower
Atlanta, GA 30303

RE: Comments on the Draft Remedial Investigation Report
(Phase I & II) for the Medley Farms Superfund Site

Dear Ms. Norville:

Two copies of the above referenced document, prepared by Sirrine Environmental Consultants (SEC) for the Potentially Responsible Parties (PRPs), were received by the Agency on December 14, 1990. At the request of the Agency, three copies were sent directly to South Carolina Department of Health and Environmental Control (SCDHEC).

As part of Superfund's review process, copies of these documents were transmitted to various programs within the Agency, the Agency of Toxic Substances and Disease Registry (ATSDR), EPA's oversight contractor, and the Department of the Interior for review and comments. A separate correspondence was sent to SCDHEC requesting the review of the copies sent to SCDHEC directly from the PRPs.

Below are the compiled comments I received from reviewers. The first three comments are general comments. The remainder of the comments are presented in the same order as they appear in the text. All comments need to be addressed by the PRPs. This can be accomplished by either incorporating the comment directly into the text of the revised RI or by a written explanation as to why the PRPs do not feel the comment is appropriate or warranted. If any other changes are made during the revision of the draft RI report other than those requested by the Agency, the PRPs will need to highlight these changes in a cover letter.

1. The technical review of the Draft RI for the Medley Farm site presents an adequate discussion of the necessary components specified by the guidance. The lack of an Endangerment Assessment (EA) limits the complete review of the RI. The RI should indicate that the EA will be submitted in a forthcoming document or must be included with the revised RI.



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2. According to the document, "Guidance on Remedial Action for Superfund Site with PCB Contamination," by the Office of Emergency and Remedial Response of August 1990, the starting point action level for soils is 1 part per million (ppm) for sites where residential land use is assumed. PCB concentrations range from 0.667 to 5.379 ppm in the Test Pits and 0.200 to 1.900 ppm in surface soil samples. The concentration of PCBs in the soil above which some type of action should be considered should be evaluated in the baseline risk assessment. The risk range for superfund sites is 10^{-4} to 10^{-6} individual excess cancer risk. Based on the standard risk assessment of ingestion, inhalation, and dermal contact, a concentration of 1 ppm PCB equates to a 10^{-5} risk. This is assuming no soil cover or management controls. Although the PCB concentrations are somewhat low, the risk of PCB contamination at the site should be addressed in the Feasibility Study.
3. Isoconcentration maps to delineate total VOCs concentrations in the monitoring wells need to be provided.
4. Page 2, Section 1.0 EXECUTIVE SUMMARY, fourth paragraph: This paragraph should state the fact that SCDHEC did not approve the Phase II RI/FS Work Plan.
5. Page 3, Section 1.0 EXECUTIVE SUMMARY, third bullet: The depth of the soil borings, as referenced in the Work Plan, should be to a minimum of 30 feet; not 25 feet as stated in this bullet.
6. Page 5, Section 1.0 EXECUTIVE SUMMARY, first paragraph: Why was the background soil samples not analyzed for VOCs during Phase I of the RI?
7. Page 6, Section 1.0 EXECUTIVE SUMMARY, fifth bullet: Groundwater was not encountered in two bedrock wells. These wells should be identified in this bullet, i.e., BW-111 and BW-112.
8. Page 7, Section 1.0 EXECUTIVE SUMMARY, second paragraph: Since BW-105 showed decreasing contamination with increasing depth, why was BW-111 and BW-112 installed?
9. Page 8, Section 1.0 EXECUTIVE SUMMARY, third paragraph: The two background wells are BW-1 and SW-1, not SW-1 and SW-2 as listed.
10. Page 8, Section 1.0 EXECUTIVE SUMMARY, fourth bullet: Refer to comment number 2.
11. Page 12, Section 2.1.1 Remedial Investigation Approach and Objectives, second paragraph: This paragraph states that Phase II began August 8, 1990, but the Executive Summary states that work began in July. Work proceeded without consent of the State.
12. Page 16, Section 2.1.2 Summary of Remedial Investigation Sampling and Analyses, Phase II Field Investigations included, first bullet, last sentence: Typo, "analysesof" -- "analyses of".

13. Page 17, Section 2.1.3 Sample Identification: SW-2 is referenced twice in this paragraph when SW-2 does not exist.
14. Page 18, Table 2.1: The "notes" are not sufficient with the post script in the table.
15. Page 18, Table 2.1: It is difficult to understand the information being presented in this table.
16. Page 20, Section 2.2 OVERVIEW, second paragraph, second sentence: Figure 2.1 illustrates sample locations on the project site, not site location or property boundaries.
17. Page 28, Section 2.2.3 Previous Investigations and Remedial Activities, first paragraph: This paragraph should state that the four private wells (Sprouse, Sarrett, Davis, and Pitman) are located on Figure 2.5.
18. Page 28, Section 2.2.3 Previous Investigations and Remedial Activities, last line: Typo, "Ri".
19. Page 30, Section 2.2.4 Domestic Wells and Municipal Water Supply, third sentence: This sentence states that the Medley well was not sampled due to information collected during the RI. The location of this information within the RI report needs to be referenced.
20. Page 40, Section 3.2.2 Survey Design and Collection of Data: The isopach maps generated as part of the soil gas survey effort need to be incorporated into the main body of the RI report.
21. Page 42, Section 3.3.1 Objectives and Rationale: The rationale for TP-15 is not included with list of location selection rationale for the Test Pits.
22. Page 42, Section 3.3.2 Phase IA Activities and Observations, second paragraph, last sentence: A statement needs to be included stating why the depth of the test pits were limited to a depth of 5.0 feet when the back-hoe had the capability of reaching a depth of 12 to 14 feet.
23. Page 50, Section 3.3.3 Phase IB Activities and Observations, first paragraph, last sentence: Refer to comment number 22.
24. Page 51, Section 3.4.1 Objectives, first sentence: This sentence does not read well.
25. Page 51, Section 3.4.1 Objectives, first paragraph: First sentence should read "surface soils sampled".

26. Page 52, Section 3.4.2 Sample Collection, first paragraph: Since PCB sampling was added after the Phase II work plan was approved by EPA, an explanation of the sampling method used to collect and analyze the PCB samples should be included in this document.
27. Page 52, Section 3.4.2 Sample Collection, first paragraph: An extra space in the middle of the paragraph.
28. Page 62, Figure 3.5: Upon plotting the analytical results from the ground-water samples on this figure it appears that the northern extent of the ground-water contaminant plume has not been delineated. Monitoring wells BW-108, SW-108, and SW-3, northeast of the disposal area, show VOCs in excess of drinking water standards. At least two additional monitoring wells may need to be installed north of these wells, between the disposal site and the tributary stream during the Remedial Design phase.
29. Page 65, Section 3.7.1 Objectives and Rationale: This document needs to state that SW-2 was the well not installed. Refer to comment number 13.
30. Page 66, Section 3.7.1 Objectives and Rationale: Explain the reasoning why a well pair was not installed at well site 104, when according to the work plan BW-104 should have been installed with SW-104. Explain the reasoning why BW-107 was not installed, since the work plan called for site 107 if contamination was found in site 106. Rationale was presented for well pairs 108 and 109.
31. Page 67, Figure 3.6: This figure is missing.
32. Page 74, Section 3.8.2 Water Pressure Testing: This paragraph should state BW-105 was not water pressure tested due to the construction of the well.
33. Page 75, Section 3.8.2 Water Pressure Testing, last paragraph: Since BW-111 and BW-112 are not water bearing wells and are "deep" wells, should their hydraulic conductivities be included with the range for bedrock wells? Why run a water pressure test in these wells when they do not produce water?
34. Page 77, Section 3.8.3 Slug Testing, last paragraph: The range of hydraulic conductivities should be 3.05×10^{-5} to 2.96×10^{-3} for saprolite wells based on Table 4.1.
35. Page 79, Section 3.9.4 Phase II, first paragraph: The samples of the four new wells were submitted for quick turn around, non-CLP. The next sentence states the samples were analyzed with full CLP protocols. Please explain these statements.
36. Page 79, Section 3.9.4 Phase II, first paragraph, second sentence: Where is the analytical data for the quick-turnaround samples presented?

37. Page 79, Section 3.9.4 Phase II, first paragraph, second sentence: A discussion on how this information (the quick-turnaround data) was used to located other permanent monitoring wells needs to be incorporated into the RI report.
38. Page 79, Section 3.9.4 Phase II, first paragraph, third and fourth sentences: These sentences are confusing. In the third sentence it is stated "...using routine laboratory QA/QC (Non-CLP)." and in the fourth sentence it is stated "...analyzed in accordance with full CLP protocols." Please clarify.
39. Page 80, Section 3.9.4 Phase II, top of page: The telephone conversations and/or written correspondences referred to here should be referenced to help support this sentence.
40. Page 81, Section 3.10.2 Phase IB Sampling: A statement needs to be incorporated into this paragraph stating what analytical parameters these samples were analyzed for.
41. Page 83, Section 3.11.3 Stream Stage Gauging, second to last sentence: Figure 3.4, as referred to in this sentence, does not provide the locations of the stream staff gauging stations.
42. Page 83, Section 3.11.3 Stream Stage Gauging: The location of staff gauges are shown on Figure 3.2, not Figure 3.4.
43. Pages 86 through 88, Figures 4.2, 4.3, and 4.4: These figures show what can be construed as a potential, major data gap; specifically, a minimal number of wells completed in the transition zone (highly fractured and weathered bedrock). This concern may be raised specially in light of the fact that groundwater flow through this area is through the fractures and therefore, this is where the greatest decree of horizontal contamination may take place.
44. Page 89, top of the page: The term "moderately" is too board and relative. A more definitive term needs to be used.
45. Page 89, top of the page: The phrase "smooth to rough" covers the entire gamut of unevenness. This phrase is too general.
46. Page 90, Section 4.2.1 Aquifer Description, first paragraph: The range of saprolite hydraulic conductivities should be listed in this paragraph. Present the reason a slug test was not performed on SW-101.
47. Page 90, Section 4.2.1 Aquifer Description, second paragraph: BW-111 and BW-112 should not be included with the range of bedrock hydraulic conductivities. Sirrine did not include BW-111 and BW-112 when calculating the average hydraulic conductivity on page 102.

48. Page 96, Section 4.2.2 Ground Water Flow Directions and Gradients, top of the page: A short phrase needs to be incorporated into this sentence or elsewhere in this section stating the significance of having a positive or negative vertical gradient.
49. Page 96, Section 4.2.2 Ground Water Flow Directions and Gradients, fourth paragraph: There is no hydrograph provide for well pair 109.
50. Page 96, fourth paragraph, last sentence: Is there any rationale as to why there is a downward vertical gradient at well cluster location 109?
51. Page 102, top of the page: Can the phrase "...indicating localized surface water recharge to the saprolite..." be interpreted as an indication that there may be groundwater originating from the site flowing beneath the stream at this location?
52. Page 103, fourth sentence: This sentence is unclear.
53. Page 108, Section 5.2 INDICATOR PARAMETERS, first paragraph: Refer to comment number 37.
54. Page 110, Table 5.2: This table should be modified to be consistent with the enclosed table. This enclosure lists the Maximum Contaminant Levels (MCLs), proposed MCLs, and health based concentrations for contaminants in drinking water for the volatile organic compounds (VOCs detected in ground water at the site.
55. Page 119, Section 5.4.1 Volatile Organic Compounds: Methylene chloride needs to be added to list of VOCs detected.
56. Page 119, Section 5.4.1 Volatile Organic Compounds, sixth sentence: Those compounds being dismissed as common laboratory artifacts need to be identified and included in this section.
57. Page 120, Section 5.4.4 Inorganics: Although there is some validity in comparing on-site concentrations of inorganics to data in available references, the more appropriate approach is to compare on-site concentrations to actual background (control) levels. Background levels should either be incorporated into Table 5.4 or another table needs to be added to the RI report comparing on-site/downgradient data to background/upgradient data for both inorganics and organics.
58. Page 121, Section 5.5.1 Volatile Organic Compounds: Vinyl chloride was also detected in HA-2, HA-3, and HA-4, not just in HA-5.
59. Page 125, Section 5.6.1 Volatile Organic Compounds: The concentrations of notable occurrences of VOC contamination should be included in this paragraph.

60. Page 125, Section 5.6.1 Volatile Organic Compounds: Some verbage needs to be incorporated into this section with respect to the depth that VOCs were found at in the subsurface soils. And if it is the assumption that residual VOC contamination is throughout the entire vadose zone (unsaturated saprolite), then this should be stated.
61. Page 133, first full paragraph: It is stated that the VOCs detected in monitoring wells SW-1, BW-1, BW-4, and SW-106 in Phase II were inconsistent with the samples collected in Phase I. In other words, high levels of VOCs were detected in these wells in the Phase II sampling event and they were not detected in the Phase I event. As a result, these wells were resampled and the analytical results indicated that the VOCs were no longer present. The Agency needs to insure that this resampling is valid and that the VOCs detected were indeed analytical or quality control errors. The Agency should be provided an opportunity to review the data as well as the accompanying QA/QC data.
62. Page 133, first full paragraph, third and fourth sentences: These sentences refer to the groundwater samples that were collected and analyzed on a quick turnaround basis. However, there is no discussion on the results of these analyses or how this information was used in this RI report. These deficiencies need to be corrected. Also refer to comment numbers 36 and 37.
63. Page 136, top of page: This paragraph mentions the collection of both filtered and unfiltered groundwater samples. Were these samples collected from both SW-1 and BW-1 or from SW-1? This paragraph does not make this point clear.
64. Page 136, top of page: What are the conclusions, if any, based on the analytical results for the filtered versus unfiltered groundwater samples? Refer to comment number 63.
65. Page 136 and Table 5.8: It should be noted that the upgradient monitoring well SW-1 had MCL and ~~p~~MCL exceedences for antimony, arsenic, beryllium, cadmium, chromium, lead, and nickel. This presents concerns that the nearby Sprouse domestic well could be contaminated with metals. Although this report makes a strong case that the metals are not associated with the Medley Farm site, the Agency recommends precautions be taken to insure that neither humans or livestock are drinking contaminated water from the well. If water from the well is being consumed it should be sampled.

66. Page 137, Table 5.8: The following pMCLs need to be added to the drinking water standards for metals. Although pMCLs are not enforceable at this time, they will be enforceable if they are promulgated before the Record of Decision is signed.

Antimony	5.0 ug/l
Beryllium	1.0 ug/l
Cadmium	5.0 ug/l
Chromium	100.0 ug/l
Lead	15.0 ug/l (Superfund cleanup level)
Nickel	100.0 ug/l
Thallium	1.0 ug/l

67. Page 137, Table 5.8 and Page 138, Table 5.9: Monitoring well SW-4 contained beryllium above the pMCL and lead above the Superfund cleanup level, and monitoring well BW-2 also exceeded the pMCL for beryllium. These exceedences need to be addressed in the report.
68. Page 139, Sections 5.8 SURFACE WATER and 5.9 STREAM SEDIMENTS: Based on the analytical data provided by monitor wells BW-106, SW-108, and BW-108, it appears that contamination from the site may have reached these tributaries to Jones Creek. Therefore, it would be beneficial if Figure 3.2 was reproduce and incorporated into this section showing these sampling points. This will help highlight the fact that sampling location RW-4/SS-4 is downgradient of both tributaries and that if either tributaries was impacting Jones Creek, it would had been detected.
69. Page 143, Section 5.10.1 Field Quality Control Samples, last sentence on page: This sentence is not clear.
70. Page 151, Section 6.0 NATURE AND EXTENT OF CONTAMINATION, third paragraph: Refer to comment number 2.
71. Page 153, Section 6.1 Residual Source Materials, first paragraph: The isolated pockets referred to in this paragraph need to be better delineated for the reader. A figure, similar to Figure 4.2 in the Draft Feasibility Study needs to be included in this section.
72. Page 153, Section 6.1 Residual Source Materials, second paragraph, last sentence: The comparison of on-site inorganic concentrations with published ranges can be used to support the discussion on the comparison of on-site concentrations versus background concentrations, but as stated in comment number 57, the most important comparison as far as the Agency is concerned, is the comparison of on-site versus background levels of contaminants.
73. Page 154, Section 6.3 Subsurface Soils, second paragraph: Refer to comment number 71. This report needs to better depict the locations of these localized areas of residual chemicals on the site. An estimated volume of contaminated soils also needs to be developed.

74. Page 154, Section 6.4 Ground Water, first paragraph: Listed under wells detected with trace levels of VOCs is BW-101. This well does not exist. Also, in Section 5.7.1, measurable concentrations are stated to exist in BW-3, SW-101, SW-103, SW-104, and BW-105, but these wells are listed under trace levels detected in this section.
75. Page 154, Section 6.4 Ground Water: An estimate in the total volume of groundwater impacted by the site needs to be developed and included in this section.
76. Page 154, Section 6.4 Ground Water: This section needs to state the estimated horizontal distances the contaminants have traveled from the site in the groundwater, both saprolite and bedrock. These distances should be given in all the appropriate compass directions.
77. Page 155, Section 6.4 Ground Water, first full paragraph: Specific depths or average depths need to be incorporated into this discussion on the vertical depth of groundwater contamination. Some discussion on the competence of the solid bedrock lying beneath the fractured zone should be included in this section. The information provided by BW-111 and BW-112 should be used in this section to better define what is felt to be the vertical extent of groundwater contamination.
78. Page 155, Section 6.4 Ground Water, first full paragraph, last sentence: The statement is made that contaminant "Transport through the extremely to moderately fractured bedrock appears to be much less than through the saprolite and transition zone." Monitoring well pair BW-108/SW-108 contradicts this statement. These are the most distant wells from the site showing contamination, and the "fractured bedrock well" (BW-108) shows VOC levels well above those in the "saprolite well" (SW-108). This tends to indicate that the majority of "contaminant transport" is occurring in the fractured rock portion of the aquifer.
79. Page 159, Section 7.0 SUMMARY AND CONCLUSIONS, Item 1.: Groundwater contaminants were detected beneath the site and downgradient of the disposal area.
80. Page 159, Section 7.0 SUMMARY AND CONCLUSIONS, Item 3.: Refer to comments 71 and 73. If possible, an estimated volume of contaminated soils should be incorporated.
81. Page 159, Section 7.0 SUMMARY AND CONCLUSIONS, Items 8, 9, and 11: Conclusion 8 states that no contaminants were detected in the background monitoring wells. This statement should be changed to indicate that no site related VOCs were detected in background monitoring wells.
82. Page 159, Section 7.0 SUMMARY AND CONCLUSIONS, Item 9: This conclusion should be modified to indicate that although there are high levels of metals in the background monitoring wells they do not appear to be related to the Medley Farm site.

83. Page 160, Section 7.0 SUMMARY AND CONCLUSIONS: Can another conclusion be reached based on the analytical data provided by monitor wells BW-106, SW-108, and BW-108 that contamination from the site may have reached tributaries to Jones Creek? The Agency will more likely than not propose that these tributaries be sampled down gradient of these well locations as part of the Remedial Design. Refer comment number 67.

As stated earlier, all comments need to be addressed by the PRPs. This can be accomplished by either incorporating the above comments directly into the text of the revised RI or by a written explanation as to why the PRPs do not feel the comment is appropriate or warranted. If any other changes are made during the revision of the draft RI report other than those requested by the Agency, the PRPs will need to highlight these changes in a cover letter or in the text of the revised report.

Comments from SCDEHC Hydrogeology Section are forthcoming. They will be transmitted to upon receipt by the Agency.

Sincerely yours,



Jon K. Bornholm
Project Remedial Manager

Enclosure

cc: Bernie Hayes, Tony Able, G-WTSU
Richard Hayes, SCDHEC
Keith Lindler, SCDHEC
James Lee, DOI
Elaine Levine, ORD
Jan Rogers, SCSS
David Schaer, Versar
Lee Page, ATPMD

REGULATORY STANDARDS FOR DRINKING WATER
IN MICROGRAMS/LITER (ug/l)
as of 1/22/91

<u>Parameter</u>	<u>MCL</u>	<u>PMCL</u>	<u>Other</u>
Acetone			700 (1)
Benzene	5.0		
Carbon tetrachloride	5.0		
Chloroform			6.0 (2)
Chloromethane			3.0 (3)
Methylene Chloride		5.0	
Tetrachloroethene		5.0	
Toluene		2000	
Trichloroethene	5.0		
1,1,2,2-Tetrachloroethane			2.0 (4)
1,1,1-Trichloroethane	200		
1,1,2-Trichloroethane		5.0	
1,1-Dichloroethene	7.0		
1,2-Dichloroethene (total)	70.0		
1,1-Dichloroethane			350 (5)
1,2-Dichloroethane	5.0		
2-Butanone (MEK)			350 (1)

- (1) - Concentration calculated from the reference dose (RfD) in EPA's 4th quarter (1990) Health Assessment Summary Tables (HEAST) using 20% relative source contribution (RSC).
- (2) - Concentration represents a one in one million (10^{-6}) cancer risk value.
- (3) - Lifetime Health Advisory value from EPA's Drinking Water Regulations and Health Advisories (November, 1990).
- (4) - Concentrations represents a one in one hundred thousand (10^{-5}) cancer risk value. The 10^{-5} value is used because 1,1,2,2-Tetrachloroethane is a Class C carcinogen.
- (5) - Concentration calculated from the RfD in EPA's HEAST using an extra 10-fold safety factor because 1,1-Dichloroethane is a Class C carcinogen.